

with no voids on its surface, the fibers existing in the product having a weight average fiber length of from 1 to 20 mm.

17. The molded product of Claim 16, which has a bending strength of not less than 90

Mpa.

18. The molded product of Claim 17, which has a bending strength of not less than 100
Mpa.

19. The molded product of Claim 16, wherein the content of fibers ranges from 10 to
70% by weight.

20. The molded product of Claim 16, wherein the porosity of the product ranges from
20 to 70% by weight.

21. The molded product of Claim 16, wherein the fibers have a weight-average fiber
length of 1.5 to 15 mm.

22. The molded product of Claim 16, which is molded into the shape of an automobile
part, a component of an electric appliance, furniture or building materials.--

REMARKS

Claims 9-11 have been canceled. New Claims 12-22 are active the case.

The present invention relates to a method of preparing a light-weight, fiber-reinforced
thermoplastic resin product, and to a light-weight molded product.

The subject matter of new Claim 12 is a process of preparing a light-weight, fiber-
reinforced thermoplastic resin product as claimed in original Claim 1, except for the inclusion
of the limitations of original Claim 9 therein which defines essential product limitations which
are the fiber content of the molded product, its porosity, a skin layer having no porosity and a

weight-average fiber length ranging from 1 to 20 mm. This process embodiment of the invention is clearly distinguished over the prior art in this case and its parent, as indeed the basic process was allowed in the parent application. Entry of the amendment into the record and allowance of the claim is respectfully requested in the light of the allowance of the parent application.

As set forth in newly presented Claim 13, the product of the invention is claimed as a molded, fiber-reinforced thermoplastic resin having a fiber content ranging from 5 to 80% by weight, a porosity ranging from 10 to 80%, and having a skin layer with no voids on its surface, the fibers existing in the product having a weight-average fiber length ranging from 1 to 20 mm. The thermoplastic resin component of the molded product is a polypropylene-based resin containing an acid-modified polyolefin-based resin.

Claims 9-11 stand rejected based on 35 U.S.C. §102(b) or 35 U.S.C. §103(a) as anticipated by or rendered obvious over Shaw et al. This ground of rejection is respectfully traversed.

The Shaw et al reference is relevant to the present invention in that it discloses a low density, fiber reinforced molded plastic product. The composite product of the reference is described (column 2, lines 19-2) as a high void volume matrix of a heat fusible resin throughout which is distributed reinforcing fibers comprising about 10 to 50% by weight of the matrix , and as having an air space (void volume) of about 30 to 70%. Further, the patent at column 3, lines 37-41 describes the fibers as having an average length of about 0.125 to 1.00 inch. However, while the patent discloses a number of resins from which the matrix material is formed, including polyolefins, there is no teaching or suggestion of the resin matrix to which the molded product of the present invention is limited which is a polypropylene-based resin containing acid-modified polyolefin-based resins as modified with unsaturated carboxylic acids. Note the detailed

description of polyolefin resins, which are modified with acid groups, on page 12 of the specification. Further, note the specific unsaturated carboxylic acids employed to modify the polyolefin as taught in the paragraph bridging pages 12 and 13 of the specification. While a significant variety of different types of resin materials is disclosed at column 2, lines 48-62 of the patent, none of the polymer materials mentioned is a polypropylene based resin which is modified with acid group containing polyolefin. Accordingly, the molded resin product of the present invention as claimed is clearly distinguished from the molded product of the reference, and, therefore, the patent neither anticipates nor obviates the claimed molded product of the present invention. Withdrawal of the outstanding ground of rejection is respectfully requested.

As to newly presented Claims 13-15, support for Claim 13 can be found in original Claim 13 and by the description of the sentence bridging pages 11 and 12 of the specification. Support for Claims 14 and 15 can be found in original Claims 10 and 11. Further, new claims find support in the previously active claims and on page 8 and the paragraph bridging pages 29 and 30 of the specification. Entry of the amendment into the record is respectfully requested.

It is now believed that the application is in proper condition for consideration on its merits.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Norman F. Oblon
Attorney of Record
Registration No.: 24,618

Frederick D. Vastine, Ph.D.
Registration No.: 27,013



22850

TEL: 703-413-3000
FAX: 703-413-2220